ABSTRACT

Measurements of the four response functions of the kaon electroproduction processes on Λ and Σ channels could give an important contribution in the comprehension of strangeness production. The current experimental knowledge, coming from data taken with low duty cycle and low intensity beams, is insatisfactory. No systematic separation of different contributions has been attempted. Many models, sometimes with a large number of parameters, try to explain existing data. We propose to measure the separate structure functions in different kinematical regions with three different aims. The first is to provide measurements of the basic electroproduction process in kinematical conditions common to those of the proposed experiments for high resolution hypernuclear studies , the second is to perform measurements in kinematical conditions optimized to try to approach the problems connected with the determination of the electromagnetic kaon form factor through the electroproduction reaction, the third is to measure the angular distribution in kinematical conditions that include also the transition to a regime in which the theoretical approach based on diquarks description of the elementary process could be applicable. The proposed MPS spectrometer, with its capability of small forward scattering angle and out-of-plane set-up, can provide high quality measurements.